

Cornell University

Floyd R. Newman Laboratory of Nuclear Studies

Newman Laboratory  
Ithaca, NY 14853-5001  
607-255-4951

FERMILAB-Proposl-0817

Telex: WUI 6713054  
Telefax: 607-254-4552

April 9, 1990

Dr. Taiji Yamanouchi  
Mail Station 105  
Fermi National Laboratory  
P.O. Box 500  
Batavia, IL 60510

Dear Dr. Yamanouchi:

The CLEO collaboration is developing double-sided silicon strip detectors for use in the CLEO experiment and would like to make use of test beam facilities at Fermilab for evaluating prototypes. The results from such tests should not only further CLEO's efforts, but also provide useful information for people involved in SSC silicon development. Our primary objective will be to measure resolutions in two different kinds of double-sided devices under a variety of detector operating conditions, and at a variety of angles of incidence.

For resolution measurements, we seek high momentum tracks and low rates. Muons with  $p \geq 100 \text{ GeV}/c$  and fluxes between 10 and  $1000 \text{ s}^{-1} \text{ cm}^{-2}$  would be most suitable. A location with easy access to the test set-up would facilitate changes between detector configurations. As long as the above conditions are met, we require no particular control over the beam, and would be satisfied with a parasitic mode of operation.

Our test set-up will consist of the following:

1. 6-10 planes of silicon strip detectors, and 4 small scintillators to provide a trigger
2. A microVax computer and the equivalent of about one rack of electronics.

The detector array itself is quite compact, resting on a plate not larger than  $50 \text{ cm} \times 100 \text{ cm}$ . The experiment itself thus requires less than about  $2 \text{ m}^2$  of floor space, and we would need in addition a suitable work space to house computer, electronics, work bench, and desk. The only significant safety hazard would be the phototube HV supply; the silicon detectors are biased at relatively low voltage,  $V_{bias} \leq 100 \text{ V}$ . To keep the detectors in a clean, dry atmosphere, we anticipate flushing the detector module with a continuous flow of nitrogen.

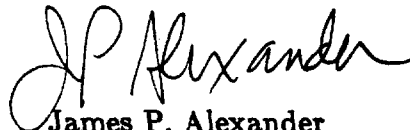
We request an Ethernet connection to link the microVax with computers at Cornell.

Approximately 3 to 5 people will be involved in this test: those of us listed below and possibly 1 or 2 students in addition. We expect 4 weeks is sufficient to complete our measurements, and request that this period fall between June 15th and August 1st.

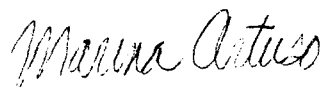
Based on telephone conversations with you, we feel the space at the back of the muon lab, if available, would be well suited to our needs.

Thank you for your kind attention in these matters.

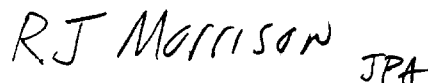
Sincerely,

A handwritten signature in cursive script that reads "JP Alexander".

James P. Alexander  
Cornell University

A handwritten signature in cursive script that reads "Marina Artuso".

Marina Artuso  
Cornell University

A handwritten signature in cursive script that reads "R.J. Morrison" followed by a small "JPA" monogram.

Rollin Morrison  
University of California, Santa Barbara